

CLAIMS

1. A rotor blade of a wind power installation, wherein the rotor blade has a thickness reserve approximately in the range of between 15% and 40%, preferably in the range of between about 23% and 28%, and wherein the greatest profile thickness is between about 20% and 45%, preferably between about 32% and 36%.

2. A rotor blade according to claim 1 characterised in that the cross-section of the rotor blade is described by a mean camber line whose greatest camber is in a range of between 50° and 70°, preferably approximately in the range of between 60° and 65°.

3. A rotor blade according to claim 2 characterised in that the greatest camber is between about 3% and 10%, preferably between about 4% and 7%.

4. A rotor blade according to one of the preceding claims characterised in that said cross-section is preferably provided in the lower third of the rotor blade, which adjoins the rotor blade connection.

5. A rotor blade according to one of the preceding claims characterised in that the rotor blade has an increased-pressure side and a reduced-pressure side, wherein the increased-pressure side has a part with a concave curvature and that an almost straight portion is provided on the reduced-pressure side.

6. A wind power installation comprising at least one rotor blade which is mounted to a rotor hub, and a hub cladding, characterised in that provided on the outside of the hub cladding is a part of the rotor blade, which is fixedly connected to the hub cladding but which is not an integral constituent part of the rotor blade of the wind power installation.

7. A wind power installation according to claim 6 characterised in that the profile of the part of the rotor blade which is provided on the hub cladding substantially corresponds to the profile of the rotor blade in the region near the hub.

8. A wind power installation according to claim 7 characterised in that the part of the rotor blade which is provided on the hub cladding is stationary and is substantially so oriented that in the position of the rotor blade at the nominal wind speed below the nominal wind speed it is directly beneath the region near the hub of the rotor blade of the wind power installation.

9. A wind power installation comprising at least one rotor blade according to one of the preceding claims.

10. A wind power installation in particular according to claim 9 wherein the wind power installation has a rotor which accommodates at least one rotor blade which is of its greatest profile depth in the region of the rotor blade hub, wherein the ratio of the profile depth to the rotor diameter assumes the value which is in the range of between about 0.04 and 0.1, and is preferably approximately of a value of between 0.055 and 0.7, for example 0.061.

11. A wind power installation in particular according to claim 9 or claim 10 comprising a machine housing which accommodates a generator and a rotor connected to the generator, wherein the rotor includes at least two rotor blades, wherein the rotor has a hub which is provided with a cladding (spinner), wherein the ratio of the profile depth of a rotor blade to the diameter of the spinner is of a value which is greater than 0.4, preferably in a range of values of between 0.5 and 1.

12. A wind power installation in particular according to one of the preceding claims comprising a rotor which preferably has more than one

rotor blade, wherein the rotor blade is of a trapezoidal shape which is more or less approximated to the optimum aerodynamic shape and the rotor blade has its greatest width in the region of the rotor blade root and the edge of the rotor blade root, which faces towards the pod of the wind power installation, is such that the configuration of the edge is substantially matched to the external contour of the pod (in the longitudinal direction).

13. A wind power installation according to claim 12 characterised in that the lower edge of the rotor blade, which faces towards the pod, in the root region, is almost parallel to the external contour of the pod upon rotation of the rotor blade into the feathered position.

14. A wind power installation according to claim 13 characterised in that the spacing of the lower edge of the rotor blade, which faces towards the pod, and the external contour of the pod, in the feathered position, is less than 50 cm, preferably less than 20 cm.

15. A wind power installation according to one of the preceding claims characterised in that the rotor blade is tilted in the root region out of the main blade plane.

16. A wind power installation according to one of the preceding claims characterised in that the rotor blade is of a two-part configuration in the root region, wherein there is a separating line which is directed in the longitudinal direction of the rotor blade.

17. A wind power installation according to claim 16 characterised in that both parts of the rotor blade are fitted together only shortly before installation of the rotor blade in the wind power installation.

18. A wind power installation according to claims 16 and 17 characterised in that the parts of the rotor blade are separated during transport of the rotor blade.

19. A wind power installation in particular according to one of the preceding claims characterised in that the wind power installation has at least one rotor blade which is characterised by a reduced-pressure side and an increased-pressure side, wherein the ratio of the length of the reduced-pressure side to the length of the increased-pressure side is less than a value of 1.2, preferably less than 1.1 and in particular is in a range of values of between 1 and 1.03.